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From the Staff

The important lessons learned for all personnel to know are in the field with you, not with us. The JCLL has the mission and the means to share those lessons with the rest of the joint community. If you or your unit have a “lesson” that could help others do it right the first time, then send it to us. Don’t wait until you have a polished article. The JCLL can take care of the editing, format, and layout. We want the raw material that can be packaged and then shared with everyone. Please take the time to put your good ideas on paper and get them to the JCLL. We will acknowledge receipt and then work with you to put your material in a publishable form with **you as the author**.

We want your e-mail address, please send your command e-mail address to us at jcll@jwfc.jfcom.mil. Our future plans call for electronic dissemination of various material.

REMEMBER!!!

TIMELY SUBMISSION OF INTERIM REPORTS, AFTER-ACTION REPORTS, AND LESSONS LEARNED RESULTS IN MORE TIMELY, QUALITY PRODUCTS AND ANALYSIS FROM THE JCLL STAFF.

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Message from the Commander
MG William S. Wallace, USA
Commander, JFCOM JWFC

This issue completes the focus on Kosovo lessons learned begun in the February 2000 issue. Here we provide four articles that give an overview of the challenges encountered during Task Force HAWK and its follow-on mission, Task Force FALCON. While sections of the articles may appear to be more relevant to the tactical level, overall they provide a good synopsis of the challenges facing a Joint Task Force in the employment of Army deep attack capabilities during a modern limited warfare operation.

The first article from the Center for Army Lessons Learned (CALL) deals with the command and control of TF HAWK within a multiple command structure. It describes the coordination and integration of the various missions and forces operating in deep operations, and centers on the employment of the AH-64 Apache attack helicopter and the Multiple Launch Rocket System (MLRS). The next two articles, also from CALL, are a more detailed discussion of AH-64 employment in deep operations and the use of the MLRS in deep fires.

The fourth article is from US Army Europe and explains how lessons learned from prior operations in Kosovo were applied to the establishment of TF FALCON. It relates some of the similarities and differences between TF FALCON and the previous operations.

I would like to thank both the Center for Army Lessons Learned and US Army Europe for their support in helping us disseminate this information to the



Joint community. By providing these articles they have given us excellent insight and a good picture of the challenges and successes encountered in Kosovo during the limited warfare and subsequent transition to peacekeeping.

Articles presented in the JCLL Bulletin are intended to be thought provoking, professionally useful, and interesting. We continue to solicit your comments on articles presented and encourage you to submit the lessons that you have learned during joint operations.

WILLIAM S. WALLACE
Major General, US Army
Commander, JFCOM JWFC



JCLL Update

Mr. Mike Barker
JCLL Director

Since the last Bulletin was published, there has been a leadership change for the Joint Center for Lessons Learned. On 1 April I assumed the helm as Director, JCLL from CDR Wayne Grumney who is now working for the Training and Exercises Division. As a brief introduction, my background is Naval Aviation (E-2C Hawkeye Naval Flight Officer) and I am a Commander in the Naval Reserve. I have nineteen years of active and reserve time which included deployments on the USS AMERICA and USS ABRAHAM LINCOLN, recalled to active duty with CINCLANTFLT N7 working joint training and Presidential Recall (PSRC) with USACOM J7 supporting the early phases of Operation Joint Endeavor/Joint Guard (Bosnia/Herzegovina). I began working lessons learned and RAP for USACOM in January 1997 while still on active duty recall, and reverted to civilian status in July 1997.

The Joint Center for Lessons Learned continues to develop, evolve, and refine itself as THE center of excellence for lessons learned and after-action reporting. As a result of the Memorandum of Agreement, which was mentioned in the last Bulletin, there are twelve key tasks that the JCLL will perform to support the joint community. They are:

- Support to real-world operations
- Review and maintenance of the Joint After-Action Reporting System (JAARS) Database
- Analysis of individual JAARS reports to identify issues, trends, CCTIs, and support the issue resolution process
- Management of lessons learned information systems
- Processing of submitted Joint After-Action Reports
- Production of the quarterly JCLL Bulletin
- Support to Operational JTF Assessments (Long-term standing JTFs)
- Assistance to Joint Staff and Joint Warfighting Center exercise Support
- Support to the CJCS Remedial Action Program (RAP)
- Support to World-Wide Joint Lessons Learned Conference
- Visit and assist Combatant Command Staffs
- Produce articles for publication in Joint/Service periodicals

Over the last three months JCLL has provided support to three major exercises – Keen Edge 00 (USPACOM), Blue Advance 00 (USSOCOM), and Cobra Gold 00 (USPACOM). In each case JCLL members prepared a pre-exercise research report based upon the event's training objectives, the mission, and related past exercises. During exercise execution, JCLL teams provided lessons learned support to the After-Action Review Cell. Post exercise, the JCLL has/will provide a draft Joint After-Action Report for each of the three JTF Commanders. In support of the upcoming Ulchi Focus Lens (UFL) exercise, the JCLL has already prepared a research report similar to those mentioned above, and presented it to the JWFC PACOM Desk Officer.

There are several long-term initiatives the JCLL has become involved with. First, the JCLL is providing support to the Naval Research Laboratory's (NRL) Intelligence Decision Aids Group studying the use of artificial intelligence in the lessons learned analysis and dissemination. A second initiative JCLL is involved with is supporting the Center for Army Lessons Learned (CALL) in their work with the University of Kansas in developing the University After Next (UAN) "virtual university." For a third initiative, JCLL developed a 45-minute period of instruction on the Joint After-Action Reporting System and its relationship to the Joint Training System for the Armed Forces Staff College (AFSC).

By now, all Combatant Commands, Service Components, and Combat Support Agencies have received and should be reviewing the first draft of CJCSI 3150.25A, Joint Lessons Learned Program (JLLP). The JCLL worked closely with the Joint Staff J7 Joint Assessment and Analysis Division (JAAD) to provide comments and recommendations concerning content and format.

In closing, we are continually looking for a "few good articles". If you have an article that relates to the joint community lessons learned and would like to see it published, by all means send it to us. Additionally, we are looking for suggestions or recommendations to help us improve those products that we provide for you.

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Task Force HAWK Command and Control

LTC Peter W. Rose II and MAJ Keith Flowers

This article will highlight unique aspects of Task Force HAWK's command and control (C2), to include the C2 structure the task force operated in. A deployment outline will also be provided to give the reader an understanding of how the TF and its HQ developed on the ground. Next, an overview of the task force organization and a quick look at each of the headquarters, sections, and their functions will be presented. The command and control section will close with the illustration of select C2 processes related to directing and leading subordinate forces.

As directed by the Commander in Chief (CINC), European Command, United States Army Europe (USAREUR) tasked its subordinate corps to deploy a task force centered around aviation and field artillery capable of conducting deep strike operations in support of NATO's ongoing Operation ALLIED FORCE. Protection of the forces was given the highest priority, commensurate with mission accomplishment. Once deployed in its theater staging base (TSB)/task force assembly area (TFAA) in the vicinity of Tirana, Albania, TF HAWK was to conduct deep attacks to destroy enemy forces in their area of responsibility (AOR). The task force was to also support air interdiction through the targeting process, conduct suppression of enemy air defense (SEAD), and be prepared to conduct offensive and/or defensive operations to defeat enemy attacks toward the TFAA. Additionally, the TF was to take all possible steps to maximize force protection. As NATO and Serbia reached agreement on peace in Kosovo, TF HAWK was alerted to provide initial forces for the peacekeeping mission.

During the operation, the task force was prepared to answer to three different chains of command. The tactical/operational chain of command remained in US hands, running from the Commander in Chief and Joint Chiefs of Staff, through the Theater CINC and Joint Task Force NOBLE ANVIL to Task Force HAWK. Title X responsibilities for TF HAWK and the resulting chain of command did not change during the deployment. The administrative chain of command for Operation VICTORY HAWK extended from TF HAWK, through its parent corps, through the Theater Army (USAREUR), and finally to the Department of the Army.

Task Force HAWK had an on-order NATO tactical/operational chain of command that was never implemented. It linked TF HAWK to NATO's Albanian Forces (AFOR) in Durrës, Albania, then NATO's ALLIED FORCES (AF) South at Naples Italy, and next to NATO's Supreme Allied Command, Europe (SACEUR).

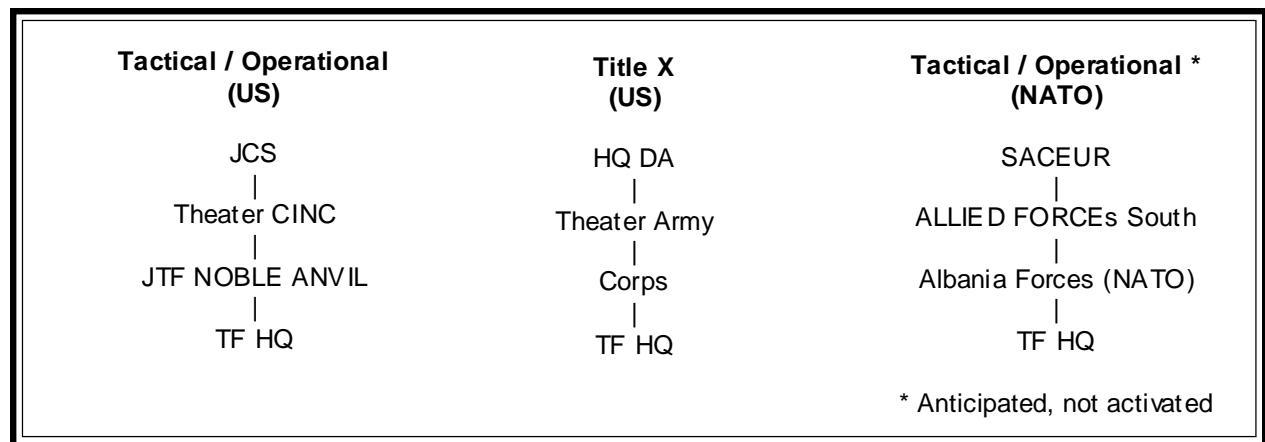


Figure 1. The Three command relationships

In addition to the command relationships described above, TF HAWK conducted coordination with elements of Operation SHINING HOPE at Rinas Airfield (the international humanitarian relief effort) and the Combined Air Operations Center (CAOC) through the Battlefield Coordination Element (BCE) located in Vicenza, Italy. Before reading emerging lessons learned, it is important to understand what Task Force HAWK was and how it developed. For this reason, the article will first describe the deployment, then the task force organization and its headquarters.

To grasp the challenges of command and control, it is important to understand how the task force deployed and appreciate the time the corps had available to prepare and organize. Even as the task force prepared to deploy, the deployment location changed. The task force did not deploy in neat timelines as Strike Force concept writers often assume. In fact, a key deployment challenge was to maximize the amount of men and equipment brought in by air lines of communications (ALOCs) to the TSB/TFAA. Since Albania lacked rail, sea, and ground infrastructure, TF HAWK had to rely almost exclusively on ALOCs for resupply and deployment of troops into the theater.

The task force, command post, and its commander faced a number of challenges during deployment and preparation for combat operations. These challenges affected the development of the task force and its deployment:

- The theater was immature and host nation support was limited.
- Practically all life support resources had to be deployed into the country.
- The logistical lines of communication were limited to one ALOC; Rinas Airfield was required to support host nation civil aviation requirements, United Nations Operation SHINING HOPE airhead operations, and the deployment and sustainment of Task Force HAWK.
- Task Force HAWK and Task Force FALCON (US Army peacekeeping force for Kosovo) competed for resources
- Strategic Airlift was limited; surface movement authority did not exist.
- Weather effects on terrain (mud) hampered movement within the TSB/TFAA.
- Political sensitivity to the mission existed throughout the deployment.
- The mission was non-standard, the task force was non-standard, and the command and control structures were unique.

To execute its deep operations mission, Task Force HAWK was organized around the deep attack capabilities of AH-64 Apache attack helicopters and Multiple Launch Rocket System (MLRS) launchers. The task force was comprised mainly of units subordinate to US Army Europe's (forward deployed) Army Corps, however one battalion task force, several smaller units, and a number of staff augmentees came from the continental United States and other overseas locations. Figure 2 graphically portrays the organization of the task force.

The task force included an attack helicopter regiment built around two twelve AH-64 Apache equipped squadrons. Additionally, a corps aviation brigade provided C2, air mobility, and air assault capabilities with organic and attached UH-60 Blackhawk and CH-47D Chinook helicopters. The aviation brigade also included assets for downed aircraft and aircrew recovery teams (DAART), forward area arming and refueling points (FAARP), medical evacuation (MEDEVAC), and a quick reaction force (QRF). The Corps Artillery mission was to integrate all indirect fire support systems and facilitate the destruction of enemy forces and equipment. Key personnel and equipment from Corps Artillery deployed to form the nucleus of the Deep Operations Coordination Center (DOCC). The MLRS Battalion consisted of three batteries with nine launchers each. Twenty-three MLRS launchers were capable of firing ATACMS Block 1, while four launchers were capable of firing ATACMS Block 1A.

The ground maneuver brigade was built around a brigade headquarters and headquarters company, a mechanized infantry battalion task force, and an airborne infantry battalion task force. The brigade mission was to conduct offensive and defensive operations to defeat enemy attacks toward the task force assembly area and to provide security (force protection) to the Task Force assembly area and the artillery team located in a tactical assembly area and forward operating base. Later, Task Force HAWK tasked the ground maneuver brigade to provide forces for peacekeeping operations until relieved by forces deploying from Germany.

The task force assembly area or base camp was located twelve kilometers northwest of Tirana, Albania. The task force occupied the southern half of Rinas Airfield, Albania's national Airport. Albanian commercial aviation shared the northern half of the airfield with elements of the United Nations Operation SHINING HOPE. US Air Force elements were interspersed on the airfield and located near the organizations they supported, either Task Force HAWK or Operation SHINING HOPE.

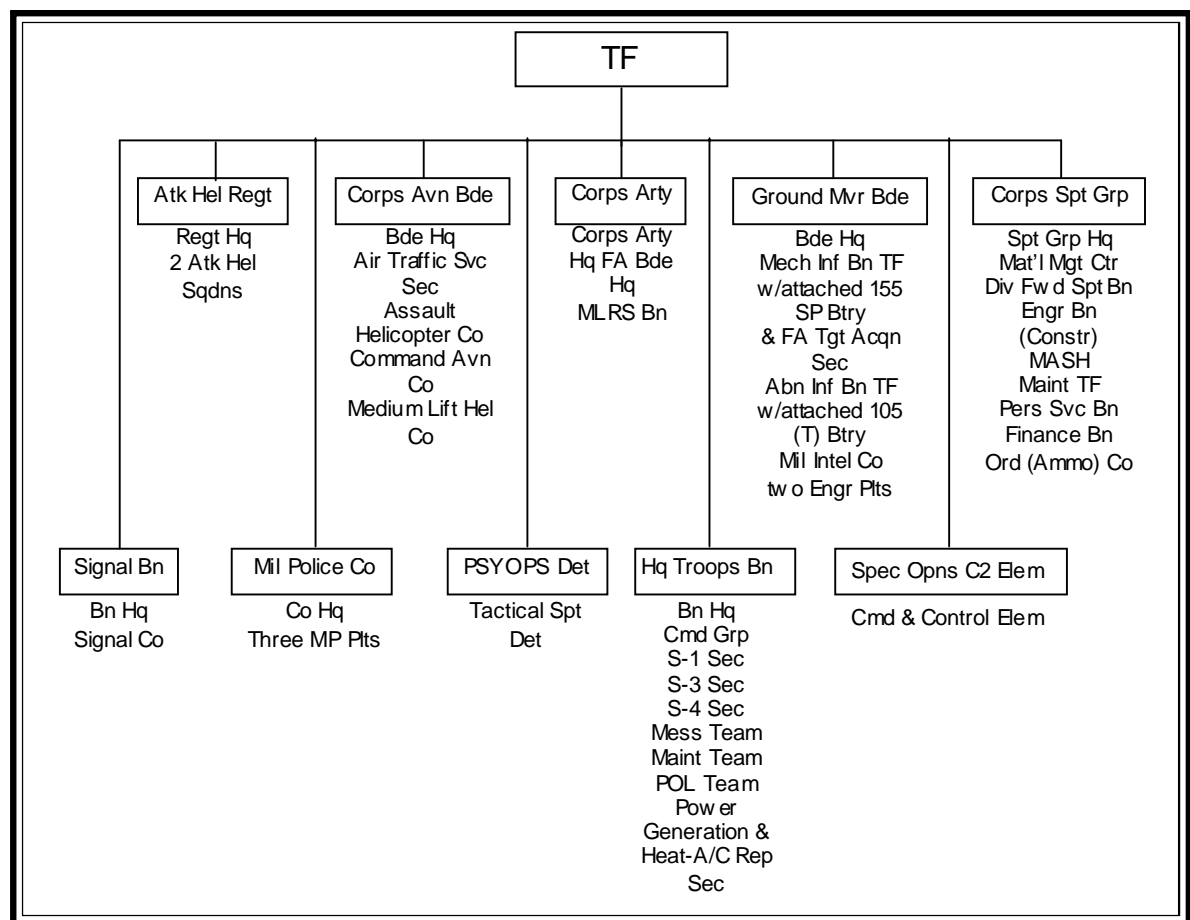


Figure 2. Task Force Organization-Subordinate Units.

Task Force HAWK and its headquarters were not ready made standing units. TF HAWK came to life in April when it's parent Corps was directed to send a deep operations task force to the Balkans. Just as the units that made up the organization were task organized, so was the headquarters itself. The Corps headquarters generated the task force headquarters primarily from its own resources. In doing so, the designers of the task force headquarters had to ensure that the Corps main command post retained sufficient capabilities to continue to plan and execute Corps operations in Central Europe, and to plan for and be prepared to execute other operations in the Balkans. As a result, the Corps staff was split. Those staff positions and command post capabilities that could not be provided to the task force headquarters from the Corps' own assets, were resourced by tasking subordinate Corps units to provide them, or by requesting and receiving augmentation from organizations external to the Corps. The initial political and strategic uncertainty challenged the Corps' headquarters planners and task force designers. The mission itself, the location, and force personnel cap changed several times in a relatively short period prior to deployment. As a result the task force headquarters grew incrementally.

The headquarters was dynamic and continued to grow throughout the deployment. It is likely after-action reports will disagree on the strength of the task force headquarters, dependent on when the snapshot was taken of each section. For example, the Task Force (G-3) Plans section with its Mil Van did not arrive until thirty days after the advance party had landed at Rinas Airfield, and more than two weeks after the task force was judged to have an initial capability in place. The last portion of this section offers glimpses of the task force during the deployment phase command and control through the deployment phase.

The command group consisted of the task force commander, his deputies, the chief of staff, secretary of the general staff, and the joint visitors bureau. The commander's personal staff consisted of the command sergeant major (CSM), special initiatives group (SIG), staff judge advocate (SJA), inspector general (IG), a political advisor (POLAD), and aides. The special staff comprised the safety officer, resource manager (co-located with the task force G-4), chaplain, special operations coordinator (SOCOORD), historian, surgeon, provost marshal, base commander, public affairs officer, and finance officer (duties performed by the finance battalion commander).

As the rest of the task force headquarters was constrained, the coordinating staff also operated under the same personnel cap. The cap was relaxed over time, allowing the headquarters to bring in the required personnel to perform essential functions. Initially, the command post's center of gravity revolved around the DOCC, its supporting staff sections and the G-2, analysis and control element (ACE), and national intelligence support team (NIST). As the task force deployed into its assembly area/base camp, the criticality of the functions normally performed by the G-3 (planning, operations control, and terrain management) became apparent in their absence. As a result, the G-3 section expanded with the increased personnel cap to meet these requirements. An extremely austere adjutant general (AG) section doubled as the G-1 personnel section. The G-4 logistics section was also minimally resourced. The G-5 civil affairs section was resourced completely by augmentation external to the theater. Finally, the G-6 signal section was also task organized and was provided primarily by the Corps signal brigade.

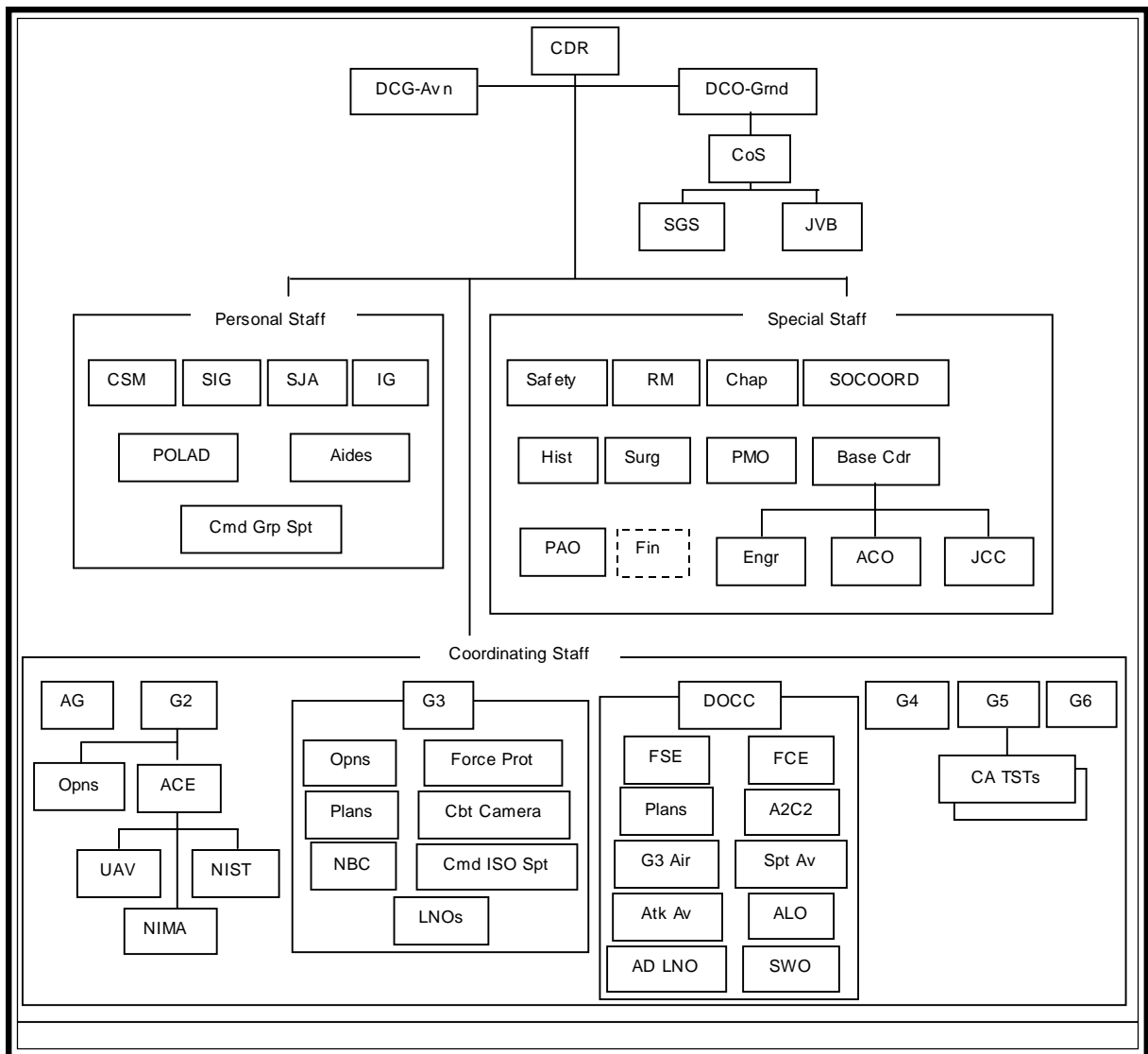


Figure 3. Task Force Headquarters

Direct and Lead Subordinate Forces

TF HAWK's unique design and environment also provided challenges for the commander and command post concerning directing and leading forces. The TF devised new techniques and modified other standard practices to accomplish this task.

TRADOC PAMPHLET 11-9 (Blueprint of the Battlefield) describes direct and lead subordinate forces as follows: To provide direction to subordinate forces so that they understand and contribute effectively and efficiently to the attainment of the commander's intent. This section will provide information on key lessons learned in this area.



Figure 4. M1A1 Abrams on perimeter security near the Task Force HAWK Headquarters

Fires/Air Integration: In accordance with FM 6-20-10, “The Targeting Process,” TF HAWK integrated fire support and air assets for deep operations at the DOCC. The DOCC acts as the battle command and control facility, which exists to support the successful execution of deep operations. Through the targeting process, targets are selected and targeting assets are allocated and employed. The DOCC ensures the process. The primary TF HAWK assets for deep attack were the Multiple Launch Rocket System (MLRS) and the AH-64 Apache.

Other means for synchronizing air and fire support assets not prescribed in doctrine included:

Colocating the attack helicopter regiment (AHR) and Corps artillery at the DOCC enabled both to develop their plans side by side. The attack helicopter regiment (AHR) colocated their tactical operations center (TOC) with the DOCC. All corps artillery TOC functions were conducted at the DOCC also. They participated jointly in targeting reviews and targeting boards, and were conveniently located near the rehearsal tent. The general support aviation brigade placed a liaison team with the G-3 Air.

- Opting to use the automated deep operations coordination system (ADOCS) for horizontal (cross-battlefield operating system) digital connectivity. ADOCS provided a digital tool for aviation and fires to coordinate deep operations.
- Adding requisite experience for a politically sensitive mission. TF HAWK augmented their staff by creating a Deputy Commanding General-Air (DCG-Air) and a DCG-Ground. The DCG-Air had previous experience conducting deep attacks as a battalion commander in Desert Storm and the DCG-Ground was a field artilleryman who provided fire support experience.

Location of Leaders on the battlefield: Task Force HAWK leadership effectively provided C2 during mission rehearsal exercises (MREs). The following is a breakdown of where key leaders positioned themselves on the battlefield.

- The task force commander - deep operations coordination center (DOCC) integrated staff office (ISO) at TF HAWK Base, or a command and control UH-60.
- The DCG-Air - airborne battlefield command and control center (ABCCC) aircraft, command and control C12, or the DOCC integrated staff office (ISO).
- The DCG-Ground - operated in the DOCC ISO.
- The attack helicopter regimental commander - AH-64 or regimental tactical operations center (TOC). If the commander was part of the strike package, then the S3 was located in the ISO, and vice versa.
- The aviation brigade commander - airborne command and control relay station (UH-60) or DOCC ISO.
- The corps artillery commander operated in the DOCC ISO.

Augmentation: Corps was tasked to create Task Force HAWK, a 5000 soldier force, to conduct deep operations while maintaining the capability to deploy an even larger force for another contingency operation. To adequately meet this requirement, Task Force HAWK relied heavily on augmented personnel in both the headquarters and unit level. For example, the mechanized infantry battalion task force received an additional scout platoon. Similarly, the task force Corps support group was itself a conglomerate of division, Corps, and theater assets.

The augmentees successfully integrated into staffs and units because leaders at all levels were attuned to team building. By different methods, the normal “we-they” attitudes that naturally occur were pre-empted. Leaders listened to their augmentees and took advantage of their experience and training. The task force leadership throughout the headquarters did not use the authoritarian leadership technique, but rather welcomed creativity and new ideas to address the unique challenges faced by a very unique Army task force.

Lessons Learned:

- Integrating the Attack Helicopter Regiment and corps artillery into the DOCC facilitated integration of fire support and air assets.
- The TF gained invaluable insights by augmenting their staff with both DCGs-Air and Ground
- Commanders and key personnel positioned themselves in a variety of operational facilities (OPFACs) to most effectively control the battle.
- Team building is vital to integrating new personnel into the Task Force.
- Units/staffs should place a high priority on integrating new personnel into a task force and task organized headquarters.
- Soldier professionalism is essential to augmenting forces or creating ad hoc organizations.

Acquire and Communicate Information and Maintain Status

An essential capability of any headquarters is to acquire and communicate information and maintain statuses. While accomplishing this task is of the highest importance, it is not easily mastered and completed. When the task force is organized from units that normally do not operate together, the challenge is greatest. Couple that with a task force C2 element that is similarly constructed and the Commander faced a significant challenge.

TRADOC PAMPHLET 11-9 (Blueprint of the Battlefield) describes the Acquire and Communicate Information and Maintain Status function as follows: To gain possession of information on the mission, enemy forces, friendly troops, terrain, and weather (METT) by or for the Commander or his staff; to translate that information into usable form, and to retain and disseminate it. This section provides information on key lessons learned in this area.

Airborne Battlefield Command and Control Center (ABCCC) Aircraft: Task Force HAWK used the ABCCC for both situational awareness and command and control during deep attack mission rehearsal exercises (MREs). The ABCCC system is a high-tech automated airborne command and control facility featuring computer generated color displays, digitally controlled communications, and rapid data retrieval. The platform's 23 fully securable radios, secure teletype, and 15 automatic fully-computerized consoles, allow the battle staff to quickly analyze current combat situations and direct offensive air support towards fast-developing targets. ABCCC is equipped, in its most recent upgrade, with the joint tactical information distribution system, which allows real-time accountability with airborne warning and control system (AWACS) E-3 Sentry aircraft.

To support deep operations, an ABCCC was used in a unique manner. Normally, Army aviation aircraft must maintain communications with the ABCCC during deep attacks. During TF HAWK MREs, Army aircraft maintained communications with an ABCCC placed in direct support of TF HAWK. If the ABCCC couldn't provide continuous mission support during the attack, the mission was cancelled. The Air Force does not normally have sufficient aircraft to provide a direct support ABCCC to Army aviation operations. While TF HAWK experienced some success using ABCCC during deep attack MREs, more training and integration of ABCCC's full capability would have improved TF HAWK's ability to command and control deep strikes.

Seeking to develop its own airborne C2 relay capability and minimize its reliance on the ABCCC fleet, TF HAWK received a modified C-12 to serve as a fixed-wing airborne communications relay. The "EC-12" increased communications effectiveness during deep attack operations, but lacked the situational awareness capability of an ABCCC.

Automated Deep Operations Coordination System (ADOCS): Task Force HAWK used the ADOCS to coordinate deep operations within the TF DOCC. ADOCS is a user friendly Microsoft Windows based program, run on personal computers (PCs), using the local area network (LAN). ADOCS allowed various DOCC cells that normally participate in deep operations, such as the fire control element (FCE), army aviation command and control (A2C2), aviation units, air liaison officer (ALO), G-3 Air, G-2, command ISO, joint warfare section, and SEAD cell to provide their input electronically for operations. It also enabled non-traditional members of the deep operations team such as judge advocate general (JAG) and G-5 civil affairs to participate in the targeting and operations planning process. JAG involvement in fires was essential because attacking targets which violated the rules of engagement may have created adverse political ramifications, or caused more damage than the benefit derived from attacking the target.

The supporting Corps had partially fielded the Army Battle Command System (ABCS), including the global command and control system-Army (GCCS-A), advanced field artillery tactical data system (AFATDS), all source analysis system (ASAS), and maneuver control system (MCS). As these ABCS systems mature, become more easy to use, and gain horizontal connectivity, they will offer the Corps an alternative means of planning deep operations. The greatest benefits of ADOCS were the ability to support all functional areas in the greater DOCC community and to integrate planning.

Fire Coordination Element (FCE) Computers: The Task Force HAWK DOCC FCE employed three available digital systems for controlling fires: ADOCS, initial fire support automated system (IFSAS), and fire direction system (FDS).

The FCE employed ADOCS for coordinating and planning fires in support of deep operations. ADOCS provided extensive fire planning, coordination and execution, data display, and communications capabilities, including real-time data sharing among multiple workstations and users. It provided horizontal and vertical

connectivity across functional areas for joint and combined operations. Functional areas included: fires, targeting, airspace deconfliction, and aviation mission planning.

The FCE used IFSAS for tactical fire direction. However, IFSAS could not compute data for coordinating airspace with the Army Airspace Command and Control (A2C2) cell. Due to this shortcoming, the FCE operated a MLRS fire direction system (FDS) to compute coordinating data for airspace coordination. The MLRS FDS provided tactical fire control for the field artillery rockets and missiles at battalion, battery, and platoon echelons.

Digital Air Support Requests (ASRs): TF HAWK used secret internet protocol router net (SIPRNET) to coordinate air support requests (ASRs) between the joint warfare section (JWS) located in the air liaison cell and the BCE. The JWS received their requests for ASRs by either verbal guidance at targeting meetings or through JSEAD worksheets. After receiving the request, they passed the ASR (in Microsoft Word format) to the BCE on the SIPRNET. Other digital systems available, but not used to coordinate ASRs because of the system's inherent complexities and the lack of time to train and sustain personnel on the systems, were these shelved systems: GCCS-Army, AFATDS, and ADOCS.

Joint Suppression of Enemy Air Defense (JSEAD) Worksheet: The Air Liaison Officer (ALO) developed a joint suppression of enemy air defense (JSEAD) worksheet that simplified the planning process, reduced errors, and helped subordinate elements maximize the effectiveness of Air Force SEAD assets. The worksheet helped requesting units plan JSEAD events by ensuring they had the correct information on the air support request. An event was defined as "a desired effect on the enemy" that would use one or more JSEAD assets. The unit submitted the ASR to the joint warfare officer (JWO). The JWO, after reviewing the ASR with the ALO, then submitted the ASR to the battlefield coordination element (BCE).

Lessons Learned:

- ABCCC served as an airborne C2 platform and provided timely SA during deep attacks.
- C12 aircraft can be outfitted with a communications package for airborne communications relay for deep operations.
- G3/S3 must continuously plan training in combat zones.
- ADOCS provided the DOCC an automated system to coordinate deep operations.
- ADOCS supported all functional areas in the DOCC and helped integrate deep operations planning.
- ADOCS allowed nontraditional deep operations team members such as JAG and G5 to provide input to the deep operations plan.
- Units must go to war with systems they are familiar with.
- SIPRNET provided an effective method of passing Air Support Request data.
- The JSEAD worksheet ensured units requesting JSEAD provide all relevant data in the ASR to achieve the desired effects.

Attack Helicopter in Deep Operations

CW4 Clay Santini

Introduction:

Attack aviation assets contributed significantly to the agility, lethality, and flexibility of TF HAWK. The biggest challenge presented to the task force was to conduct deep/combat operations with aviation assets as the maneuver force. Additionally, the U.S. Army has not employed attack helicopters in deep operations since the Persian Gulf War. Task Force HAWK's preparation of its Attack Helicopter Regiment (AHR) to conduct deep strikes in Kosovo provides invaluable Tactics, Techniques, and Procedures (TTP) for future deep operations, especially in a mountainous environment against a dispersed enemy. Future Army Aviation planners should focus on the attack helicopter unit organization, planning sequence, rehearsal, and execution to ensure mission success.

Organization:

The National Command Authority limited the number of attack helicopters in TF HAWK to 24 AH-64s. To facilitate continuous operations, the Task Force Attack Helicopter Regiment (AHR) deployed almost all of its personnel from its headquarters and two squadrons. However, to meet the number cap placed on deployed aircraft, each squadron deployed only 12 AH-64s, half the authorized strength. The Task Force AHR conducted continuous operations by rotating each squadron through 24-hour cycles. The aircrews from each squadron were utilized in a day on, and day off cycle. During a squadron's cycle, the unit utilized two troops and a total of five aircraft per troop during the cycle (10 AH-64A total). The troops conducting the mission cycle worked approximately 12 hours, starting with rehearsals in the afternoon and mission execution in hours of darkness. The remaining troop served as the TF HAWK Quick Reaction Force (QRF) for a 72-hour cycle. Additionally, the QRF troop could utilize all non-flying aircrews from the squadron. The unit kept two AH-64s on Readiness Condition 3 (REDCON3). The REDCON 3 aircraft were expected to be airborne within 30 minutes of notification. The QRF crews rotated out at 8-12 hour intervals, thus shortening the crew duty day to a maximum of 12 hours and increasing fighter management.

To increase aircraft availability for continuous operations each squadron deployed all 24 crew chiefs to maintain its 12 deployed aircraft. Each squadron is authorized one crew chief per AH-64 but deployed all 24 in the unit. By placing two crew chiefs on each AH-64, the two squadrons increased aircraft readiness and their ability to conduct continuous operations.

Augmentee personnel further increased the regiment's ability to conduct continuous operations. An additional eleven crews from a CONUS AH-64 company enhanced aircrew readiness and availability of RL 1 (RL1 = Mission training complete) crews. Furthermore, Temporary Change of Station (TCS) personnel augmented the regimental staff and squadron headquarters. These TCS personnel worked in planning cells that enhanced the ability for continuous planning of operations.

The unit task organization enhanced the Attack Helicopter Regiment's mission to conduct full-up Mission Rehearsal Exercises (MREs) to validate deep/combat operations in support of Operation ALLIED FORCE. The regimental Mission Essential Task List (METL) included the conduct of deep operations prior to deployment to Albania. The challenge of the assigned mission was to plan and execute attacks against a stationary, defensively postured, and dispersed enemy force in Kosovo. Task Force aviation elements planned doctrinal deep operations using indirect fires (Multiple Launch Rocket System (MLRS), 155mm, and 105mm) to target enemy positions along ingress aviation routes and Engagement Areas (EA). Intensive detailed joint planning and extensive Intelligence Preparation of the Battlefield (IPB) by Corps G3 and G2 staffs supported the plans. Unmanned Aerial Vehicles (UAV), Airborne Warning and Control System (AWACS), and Joint

Surveillance Target Attack Radar System (JSTARS) provided key intelligence gathering capabilities to TF HAWK. Joint Suppression of Enemy Air Defense (JSEAD) was planned for all missions, but not conducted during MREs. Airspace deconfliction, coordinated at all levels of Task Force Army Airspace Command and Control (A2C2), was then forwarded to the Combined Air Operations Center (CAOC). Additionally, the Task Force controlled all friendly Air Defense Artillery (ADA) assets in the AOR, which gave them control of weapons status. Furthermore, abort criteria and mission No-Go criteria served as a decision matrix for employing assets.

Abort Criteria used by TF HAWK:

1. Combat loss of two aircraft in the attacking element of 4-5 AH-64s.
2. Loss of communications from the executing elements with Deep Operations Coordination Center (DOCC), Command and Control (C2), or Airborne Command and Control Center (ABCCC).
3. No JSEAD and No SEAD on known ADA.
4. Enroute and engagement area (EA) weather less than 1000ft. Ceiling and 2 miles (3200 meters) in-flight visibility.
5. Combat Search and Rescue (CSAR) elements must consist of at least one MH-60, Pavhawk, and one MH-53, PaveLow.
6. Change of Air Mission Commander (AMC) occurs and mission success is compromised.

Mission No-Go Criteria used by TF HAWK:

1. Target not approved.
2. Mission rehearsal not completed.
3. Key C2 communications inoperative
4. Target and EA intelligence not current (over four hours old from time of forward line of troops (FLOT) crossing).
5. JSEAD/SEAD not available for enroute and in EA for known ADA positions.
6. Weather less than 1000ft. Ceiling and 2 miles in-flight visibility.
7. Restricted Operation Zone (ROZ) not approved by CAOC.
8. CSAR minimum package of one MH-60 and one MH-53 not available.

Key Lessons Learned:

- Task Force was more capable and retained greater flexibility by deploying two squadrons of ready crews to support one squadron of aircraft.
- Utilization of augmentees allowed for continuous operations.
- Despite the requirement for 24 aircraft, equivalent to one squadron, the decision to deploy two squadron headquarters facilitated mission planning and execution.
- Attack Helicopter Regiment adjusted its METL task of deep operations based on Mission, Enemy, Terrain and weather, Troops available, and Time (METT-T) considerations.

Planning:

To plan and prepare for deep operations, the aviation task force conducted MREs, which were sequenced using an F-hour (F-hour was the hour that the aircraft simulated crossing the border) matrix. The task force used F minus eight hours (F-8) as the standard for starting the mission planning cycle. An MRE was a rehearsal designed to replicate distances flown during the actual missions. The purpose of the MRE was to exercise the aircrews' ability to execute the required tasks for successful mission completion. The F-8 hours time matrix allowed ample time to brief, rehearse, and execute the scheduled mission. The aviation task force discussed during After-Action Reviews (AAR) if this time matrix should be adjusted. After several weeks of conducting MREs, the time matrix was adjusted by one of the attack helicopter squadrons to F-7 hours for

mission execution, while the other remained at F-8 hours. One squadron decided that it needed the extra time to allow crews to complete last minute updates and to eat.

To prepare for an MRE, just as the unit would for a mission, it used various mission planning equipment. This equipment included the use of the Aviation Mission Planning System (AMPS), the Automated Deep Operations Coordination System (ADOCS), UAV Imagery, TOPSCENE, and WinCATS.



AMPS: The AMPS was the only means of loading mission data into the Data Transfer Cartridge (DTC). The AMPS standardized all mission data for a flight of mission aircraft. The DTC loads into the AH-64A Data Transfer Unit (DTU) which is located inside the Copilot Gunners (CPG) station. The DTC allows the Fire Control Computer (FCC) to download coordinate files for waypoints, targets, present position and laser codes. The AH-64A DTC has 256K of memory which limits mission data and capabilities. The AH-64D and the Kiowa Warrior both have DTCs capable of one Megabyte, which enhances memory capabilities. Additionally, the

UH-60 DTC is not compatible with AH-64 and requires a separate AMPS DTU to load the DTC. Version 4.3 software for the AMPS made some improvements, including the use of a laser printer that eliminates the low quality dot matrix printer. Version 5.0 Windows NT, AMPS software has been procured but has not been fielded to the units. This upgrade will make the AMPS more user friendly. Users need at least a 17" (19" preferred) computer monitor. To print maps off the AMPS, pilots use the print screen function, which prints a small/poor quality map. The quality and resolution of the screen print capability can be enhanced by equipment upgrades.

A team from Communications Electronics Command (CECOM) delivered and trained squadron personnel in theater on a new mission rehearsal capability of AMPS. The Aviation Mission Rehearsal (AMR) upgrade fielded by the CECOM team allowed pre-flight review of air routes. However, its resolution and quality was not as capable as the TOPSCENE simulator. Each squadron had six AMPS available. The squadrons distributed three AMPS to the Tactical Operations Center (TOC) and one to each of the three line troops. Within the squadrons, there were four school trained AMPS operators. Trained operators received their training from CECOM.

ADOCS: Served as the primary mission planner throughout the task force. The AMPS and ADOCS were not compatible. The ADOCS was used to create flight routes, select Attack by Fire (ABF) positions, mission graphics, and to plot friendly and enemy positions. ADOCS and AMPS Digital Terrain Elevation Data (DTED) varied because the DTED used the most with ADOCS is the 1:100,000 scale and is not available for use on AMPS. The AMPS was not capable of displaying flight routes, only waypoints. The squadrons manually transferred ADOCS mission data to the AMPS. This resulted in duplication of effort between the regiment and squadron. Several AMPS within the squadron did not work and no trained technicians were available to repair the AMPS in theater.

Imagery: Served as the primary means of giving attack crews intelligence of the objective area. UAV imagery had good resolution and provided situational awareness to crews on terrain and target array layout. However, most video reviewed was 24 hours old. The aircrews had access to live UAV video, but often they could not review them due to other required pre-combat checks. Squadrons also received satellite photo prints of objective areas. However, the resolution was only adequate for observing terrain features and the acquisition of target groups. Identification of individual targets and man made features are essential for mission execution. Photos that utilized laser printers would provide this capability.

TOPSCENE: A computer simulation system that re-produced imagery from digital mapping. TOPSCENE is capable of a screen print function. This system allowed aircrews to print objective area photos as viewed from ABF positions. The TOPSCENE photos were good quality when photo quality paper was used during printing. Additionally, aircrews utilized the TOPSCENE for mission rehearsal of actual flight routes prior to execution. The use of TOPSCENE enhanced aircrew situational awareness prior to flight and ABF operations.



TOPSCENE 4000

WinCATS (Version 3.1): A Windows based software that was capable of taking digital mapping and presenting topographic information in a usable scene. AH-64 crews utilized WinCATS to refine ABF selection and operations. Additionally, WinCATS allowed planners to input threat weapon systems at actual locations as derived from intelligence updates providing aircrews the ability to see “ownship” Line of Sight (LOS) information as well as threat lethality rings and LOS of enemy weapon systems.

Successful deep operations depended not only on state-of-the-art mission planning equipment, but also on standardized procedures for the TF aviators. The task force developed an Aviation Procedure Guide (APG) to provide standardization for all task force aviation assets. The APG was established by Air Traffic Services (ATS) and approved by Deputy Commanding General (DCG)-Air. Aircrews had to read and understand the APG prior to operating aircraft in the Tactical Area of Operation (TAOO).

During Inadvertent Instrument Meteorological Conditions (IIMC) within the TAOO mission airspace, aircraft were required to turn to avoid known obstacles, climb to 5500' MSL in flat terrain, 9000' MSL in mountainous terrain, and proceed on a heading towards friendly airspace. Once the aircraft was established in a climb, it was required to contact NATO Early Warning Aircraft/Airborne Early Warning (NAEW/AEW) and Tirane Radar Approach Control (RAPCON). Each subsequent aircraft in formation had to climb to an altitude 500' higher than the previous, or as directed by RAPCON. If Ground Controlled Approach (GCA) radar was not available, or the aircraft lost communication, it was required to proceed directly to TIRANE Non Directional Beacon (NDB) and perform the Tirane Category B NDB approach. Aircraft squawked code 7700 (emergency) for IIMC or 7600 (lost communications) on the Transponder, Mode 3A.

Task Force AH-64s were equipped with the Automatic Direction Finder (ADF) Set, AN/ARN-89. Some fielded AH-64s have the new ADF (the AN/ARN-149 (V) 3). Unreliability of the AN/ARN-89 ADF

has been documented. Additionally, TF AH-64s are equipped with the Integrated Navigation System/Embedded Global Positioning System (GPS) Inertial (EGI) which could be used as a primary means of instrument navigation. However, in current configuration, the GPS did not meet U.S. Army requirements to fly GPS instrument approaches due to a corruptible database purchased for the navigation system. Based on the proven accuracy of GPS, unit Instrument Flight Examiners (IFE) must utilize the Terminal Procedure (TERP) manual to develop an emergency GPS approach, backing up the navigational approach aid and aircraft instrument suite.

Key Lessons Learned:

- The standard mission planning matrix (F-7/F-8 hour time matrix) ensured adequate preparation, rehearsal, and refinement prior to mission execution.
- The Aviation Mission Planning System (AMPS) is not compatible with ADOCS.
- The AMPS is the only piece of equipment able to fill the Data Transfer Cartridges (DTC), but all aircraft types do not use compatible DTCs.
- Units require capability to service, repair, and replace AMPS in a tactical environment.
- The Aviation Mission Rehearsal (AMR) system is not as capable as TOPSCENE.
- UAV and TOPSCENE imagery are excellent tools to help the aviation unit plan and rehearse missions.
- Actions on the objective can be rehearsed in great detail utilizing UAV and TOPSCENE imagery.
- Review live UAV video on mission day with intelligence personnel, and relay pertinent information to aircrews prior to mission launch.
- Develop a standardized IIMC recovery procedure for AOR.
- Mountainous AOR's require development of emergency instrument GPS procedures.
- EGI is an excellent system for use on unit-developed emergency instrument approaches.
- AH-64s need reliable ADF as a primary IIMC recovery aid.

Rehearsing:

The aviation task force began MREs at F-8 hours. The rehearsals were allotted 1+30 hours, but were trained to the standard, not time. These TF level rehearsals were conducted in a large tent that provided room for 50 plus personnel, all required map boards, master hazard map, and a large enough floor area to lay out two complete missions at one time. Engineer tape, placards, rope, and wood blocks of various colors were used to represent control measures, mission graphics, and key mission elements.

All mission executors participated in "Rock Drills" or "Walk Throughs" in the rehearsal tent. Command elements served as facilitators to the aircrews and Base Operating Support (BOS) representatives. All rehearsals were initiated with an updated intelligence brief by the Regimental S2. Upon completion of the intelligence update, the Regimental S3 followed the execution matrix line by line. As each line was read, each element would execute their portion on the terrain board. The facilitators then placed individuals in certain scenarios to see how they would react. Though the rehearsals tracked a mission from takeoff to landing, they did not discuss actions at the objective. The squadron, under the supervision of the Squadron Commander, S3, and Troop Commanders rehearsed actions at the objective during squadron level rehearsals. The squadron level rehearsals were conducted the day prior, and focused on the execution of individual crew and troop



Rehearsal Tent

actions.

In addition to “Rock Drills”, the aircrews conducted extensive rehearsals. Aircrews utilized TOPSCENE, a computer simulation system that utilizes imagery to allow mission elements to survey the terrain. Crews were able to view terrain on TOPSCENE from 1-5 meter resolution in Albania and Kosovo. Aircrews also utilized the AMPS. The AMPS was upgraded to allow similar mission rehearsal capabilities as the TOPSCENE, but did not have the same resolution. Furthermore, AH-64 pilots used WinCATS to refine ABF operations. This allowed aircrews and planners to input threat weapon systems at actual locations as derived from intelligence updates. Additionally, aircrews were able to see “ownship” LOS information as well as threat lethality rings and LOS of weapon systems. The use of mission rehearsal equipment provided to the TF greatly enhanced their mission success potential.

Key Lessons Learned:

- All executing members of the mission must be present at all rehearsals.
- Follow standardized formats when conducting rehearsals.
- Senior leaders must ensure units rehearse the actions on the objective.
- Establish a unit training program that incorporates using TOPSCENE, WinCATS, and AMPS for mission rehearsal.

Execution:

The AHR task force faced numerous challenges in executing deep operations in the AOR. Small and isolated enemy target sets precluded the TF from massing attack assets. Extremely mountainous terrain coupled with the high altitude degraded aircraft performance and limited flight route and engagement area options. Long flight routes from the TF assembly area to the engagement areas (EAs) made fuel considerations paramount. TF HAWK used a number of Tactics, Techniques, and Procedures (TTPs) to overcome challenges in deep operations execution.

Tactics: The AHR task organized Apaches into small strike forces to engage the small target array. This TTP was contrary to doctrinal deep operations, which called for massing attack helicopters on the target. Attack helicopters did not have to mass to service targets due to the small size of arrays. (Target set example: 4 T-55 tanks, 2 D-30 towed Artillery Pieces, and 1 or 2 Anti-Aircraft Artillery (AAA) systems)

Extreme mountainous terrain (Albanian Alps) channeled or limited attack helicopter flight routes and attack by fire (ABF) selection. Unit planning cells used TOPSCENE to locate terrain they could apply Background, Range, Area to maneuver, Sun and Moon, Shadows, Cover, Rotorwash, Altitude above target, and Fields of fire (BRASSCRAF) to select positions that could sustain two attack aircraft in the ABF area at a minimum.

Based on the conditions provided above, the unit task organized a flight of four aircraft into two teams that utilized Lead/Wingman formations. A fifth attack aircraft flew on some strike packages for security and C2.



AH-64A Wing Stores Configuration: Initially, the AHR configured its AH-64A Apaches with an Extended Range Fuel System (ERFS). Using ERFS, aircraft were capable of carrying 230 gallons of fuel on the left inboard pylon, two 19 shot rocket pods (M261) on the outboard pylons, and one missile launcher (four hellfire missiles) on the right inboard pylon (M272). This configuration was in accordance with the current Interim Statement of Airworthiness Qualification (ISAQ). One of the two attack helicopter units had trained with ERFS in mountainous terrain during a recent deployment to Bosnia. However, the unit had performed training with ERFS under more favorable environmental conditions. The other squadron deployed untrained in mountain flying

because of limited resources and available training time prior to deployment. The training required for the Kosovo AOR should include environmental training (mountain flying) as well as academic training concentrating on high gross weight operation and power management. If time is available prior to deployment, the unit should review environmental flight considerations for the deployed AOR and replicate these conditions within aircraft compatible flight simulators.

The ERFS increased risk to aircrews not only because of greater weight in high altitude flight conditions, but the system also lacked ballistic tolerance and crashworthiness. These factors prompted the TF to remove the fuel tanks from the wing stores. However, this required the TF to use more forward refueling points. The ERFS was only employed when forward refueling points were not available.

AH-64 Weapons Configurations: The two squadrons used similar weapons configurations and ordnance loads. The weapons configuration consisted of one to four Hellfire missiles. This was dependent on the number of targets requiring a Point Target Weapon System (PTWS) and whether ERFS was utilized. Additionally, the AH-64s carried 440 rounds for the M-230E1 (30MM cannon) which was based on the defensive requirement and weight savings of 560 pounds over a 1200 round maximum load. The M-261 rocket pods were loaded with three different warhead types, two different fuse combinations, and all with the same rocket motor (MK-66, MOD 2). The task force used the M261 Multipurpose Submunition (MPSM), M255A1 Flechette, and the M151 High Explosive (HE) rocket warheads. The fuse combination used on the MPSM and Flechette was the M439 RC (Resistance Capacitance Electronic Time Delay, Forward Firing) Fuse. The HE warhead was fused with the M423 Point Detonating (PD) Fuse. The unit procured the M255A1 Flechette from the Special Operations community. The Flechette was tested on the AH-64 and granted an Airworthiness Release (AWR) by Aviation Missile Command (AMCOM) for use in this operation. Additionally, Boeing made a Fire Control Computer (FCC) software modification. The FCC software was upgraded from -51 to -51K, which allowed the Flechette rocket to be fired from the Aerial Rocket Control System (ARCS) position utilized for MK-66 Smoke Rockets (6SK). The acquisition of the M255A1 Flechette added the flexibility to engage and suppress personnel and area targets at short to medium ranges.

Night Vision Goggle Usage: Both squadrons used Night Vision Goggles (NVGs) to enhance night flying capabilities in the mountainous AOR. Both squadrons were untrained in NVG operations prior to deployment. The squadrons used AN/AVS -6 (V) 1A, NVGs with OMNI 4 tubes. These NVGs noticeably improved visual acuity and did not shut down in high ambient light levels like older models. The NVGs clarity

and resolution was better under most conditions than the Target Acquisition Designation Sight (TADS) Forward Looking Infrared Radar (FLIR) used by the front seat copilot gunner (CPG). NVGs allowed the CPG to provide better en route navigation and obstacle avoidance.

However, mountainous terrain presented varied weather conditions that were unforecasted by the unit Staff Weather Officer (SWO). NVGs did not perform as well as FLIR when aircraft encountered bad weather. As a result, AH-64 CPGs transitioned to the FLIR when encountering bad weather, while the UH-60 aircrews remained on NVGs. This placed the UH-60 aircrews at a disadvantage as they struggled to remain with the flight of AH-64s in restricted visibility.

As a means of aircraft recognition during blackout operations with NVGs, TF AH-64s used infrared (IR) chemical lights to aid visual recognition. Several techniques and locations were used for the IR chemical light placement on the AH-64s. However, the IR chemical was ultimately secured to the AH-64 tail wheel-locking handle, and secured with flex ties.

Command and Control (C2): TF HAWK achieved C2 of the AH-64s strike package using satellite communications (SATCOM). The mountainous terrain in the task force AOR required a redundant C2 plan. SINCGARS and HAVEQUICK II radios mounted on the AH-64 were not effective in this environment because of line of sight interference. An UH-60 (Command Console) equipped with an ARC-212 (SATCOM) served as the link between the AH-64s and Hawk Base. The C2 UH-60 flew across the simulated FLOT with the AH-64s, communicating directly to Hawk Base via SATCOM. If unable to contact Hawk Base directly, the C2 UH-60 used an airborne relay via the Airborne Command Control Center/Airborne Warning and Control System (ABCCC/AWACS) via SATCOM, FM, and/or UHF to contact them.

Fighter Management: To ensure the TF aviators were rested for the demanding condition of night deep attack, the AHR required individual crewmembers to track duty hours on crew endurance-tracking sheets. Tracking sheets computed daily, weekly, and monthly totals, including flight hours and exogenous factors to arrive at an individual's total duty performed. Unit leadership monitored crew fatigue levels using these crew endurance tracking sheets. Army Aviation Flight Regulation (AR) 95-1 provides the guidelines for units to derive their Fighter Management Programs. AR 95-1 authorizes aircrew members to work 16 hours of duty, with a maximum of eight hours-factored flight time in a 24-hour period. Squadron leadership concluded after the first week of operations that a 16-hour duty day in the task force AOR would be excessive for continuous operation. Leadership based this decision on the proximity of the Life Support Area (LSA) to a high-density traffic airfield (Rinas). Constant air traffic into the airfield generated high noise levels and made adequate crew rest difficult. Units could not segregate day and night crew sleeping quarters due to size constraints of the LSA. All this led to an attempt to limit normal duty to 12 hours. The leadership made every effort to have aircrews complete flight duties around the 11th hour of duty, and to complete the after-action review by the 12th hour of duty. Interviews with regimental aviators revealed this schedule was sustainable and allowed a higher level of situational awareness during demanding flight duties in the AOR.

Key Lessons Learned:

- Assign specific targets to AH-64s and configure them to achieve the desired effect.
- Utilize TOPSCENE for ABF selection if available.
- External fuel tanks are not crashworthy or ballistically tolerant.
- External fuel tank operations require additional training.
- Additional AH-64 aviator training is required for operating at high gross weights.
- Procurement of the 2.75" Flechette (M255A1) with MOD 2 MK66 rocket motors increased the flexibility of weapon loads.

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- Weapons loads were configured based on likely targets and environmental factors.
 - Night vision goggles (AN/AVS-6 (V) 1A) with the Omni 4 tubes enhanced AH-64 tactical night flight operations.
 - A mixed flight formation of AH-64s and UH-60s using night vision devices during blackout operations requires alternate lighting considerations.
 - AH-64 aviation units should establish NVG training programs in accordance with TC 1-214, AH-64 Aircraft Training Manual.
 - The primary means of communication in mountainous terrain is SATCOM. Back-up means was UHF, VHF, and FM from the TF helicopters to ABCCC.
 - Redundant C2 linkage was required when conducting deep operations.
 - 12-Hour duty cycle for aviation flight crews allowed best performance and situational awareness during continuous operations.
 - When possible, construct LSAs further away from high density/volume noise areas to allow crewmembers better sleep and rest capability.
 - Units need to separate aircrew-sleeping quarters by work shifts.
 - Employ economy of force based on ABF size and available terrain, utilizing METT-T.

Multiple Launch Rocket System (MLRS) Deep Fires

Major Randall K. Cheeseborough

Introduction:

To understand the challenges associated with Task Force HAWK from a Multiple Launch Rocket System (MLRS) perspective, one must first understand the issues related to the Mission, Enemy, Terrain, Troops, and Time available (METT-T). This unique operation and METT-T have forced the MLRS unit to alter/change some of its Tactics, Techniques, and Procedures (TTPs) to accomplish the endstate; Suppression of Enemy Air Defense (SEAD). As one soldier put it, “we had to throw doctrine out of the window.” This was due to METT-T.

“The way we are operating out here, you will not find it in no FM 6-60 (Tactics, Techniques, and Procedures for MLRS Operations).”

Senior NCO, MLRS Battalion

Mission. The mission of the MLRS unit during Task Force HAWK was to provide long range fires in support of the aviation attack on enemy forces. Providing Army Tactical Missile System (ATACMS) SEAD was the number one priority initially followed several weeks later by rocket SEAD fires from forward firing points.

“We are here to support the attack helicopters by the suppression and destruction of enemy air defenses.”

Field Artillery Battalion Commander

Enemy: The enemy threat to the MLRS units consisted of possible guerrilla forces, bandits, terrorists, and indirect fire. For the most part, an air threat, a counterfire threat, and a conventional threat to the MLRS forces were considered low. The conventional threat consisted of two different forces from the Yugoslav Army. The first threat was from the 3rd VJ Army in Pristina, Kosovo, to the northeast, and the second threat was the Podgorica Corps in Montenegro from the 2nd VJ Army to the northwest. The enemy’s air threat was very low due to NATO forces having air superiority throughout the operation. The counterfire threat was considered low because the enemy had limited indirect fire assets with range to the MLRS units. The conventional threat was low due to the MLRS unit’s distance from the border and the restrictive, rugged terrain. This allowed the MLRS battery to abandon its traditional shoot-and-scoot tactics and fire from established road networks. The shoot-and-scoot tactics, combined with the wide dispersion of elements, normally help MLRS units avoid detection and minimize vulnerability.

Terrain. The MLRS units operated in a restrictive environment. Terrain management was a major concern for the MLRS units due to mobility issues, farmland, narrow roads, and restricted terrain. Terrain in the region consisted of mostly mountains and hills. In most cases, the water table was extremely high, impeding cross-country mobility. As a result, the launchers were forced to operate/fire from improved and unimproved roads for the most part.

Troops. The troops from the MLRS unit were highly motivated. The troops were well trained and extremely excited about putting missiles and rockets down range. They had to operate forward of the base camp/Forward Line of Own Troops (FLOT) to accomplish the mission. Due to the launchers operating forward and their capabilities, the launchers became a high-payoff target for the enemy. Therefore, the protection of the launchers was a major concern. To minimize any threat to the MLRS troops and equipment, they were augmented with troops from the infantry, air defense, military police, and engineers. Additionally, a platoon of M270 Improved Position Determining System (IPDS) launchers was attached to the battalion. While the battalion's launchers can fire over 165 kilometers, the M270 IPDS launchers are capable of firing over 300 kilometers.

Time Available. The MLRS unit was allotted more than enough time to prepare for the mission. The unit deployed from the base camp located at the Tirana Airport in Albania to the battery operational area/firing points. The battalion operated from the base camp. During routine operations, the battalion would go through a series of rehearsals. The battalion's leadership would participate in a TF HAWK rehearsal with the attack aviation to synchronize the fires with the aviation scheme of maneuver. The MLRS battery's leadership and soldiers would participate in a series of rehearsals to synchronize the force protection and firing battery assets for the movement and occupation of the firing point. Prior to the F-Hour (or aviation cross-FLOT time) the entire fires chain, from the Corps Fire Support Element (FSE) to the launcher, would participate in a technical rehearsal.

MLRS Operations

The MLRS battalion in Albania was prepared to fight well forward and use its shoot-and-scoot capability to improve survivability. The battalion deployed forward but had to abandon its shoot-and-scoot tactics due to the threat and terrain. In abandoning this tactic, the MLRS battalion in Albania developed new TTPs to provide accurate and timely SEAD fires. It implemented new employment techniques, a MLRS Forward Operating Base (FOB), and a force protection package to operate effectively and efficiently.

New Employment Techniques. Task Force HAWK brought to light many unseen gaps in current TTPs for MLRS operations. Doctrinally, an MLRS battery Operational Area (OPAREA) is approximately 9x9 km (3x3 km for a platoon). However, the exact size of an OPAREA is a function of METT-T and a result of risk assessment. Each launcher is allocated at least three firing points during an operation. Each firing point should be at least 500 meters apart (800 meters preferred).

Each launcher should have a hide area that is no more than 100 meters away from the firing point. The hide area is a concealed area for the launcher while awaiting a fire mission. After firing, the launcher will move to a reload point at least 800 meters from the firing point and at least 500 meters from any other elements. Normally, each battery has six reload points. Additionally, a battery would have at least two Survey Control Points (SCP) per platoon OPAREA (six total for battery), a platoon headquarters controlling three launchers, and the ammunition holding area (AHA) 100 to 300 meters from the platoon headquarters. The SCPs should be collocated with the reload points to reduce travel time of the launchers. The AHA can be collocated with the platoon headquarters.



Figure 1. Launcher on firing point

The MLRS unit in Task Force HAWK employed non-doctrinal techniques. Significant changes were made to doctrine to accomplish the mission due to METT-T. The battalion used raid-like assaults to employ the MLRS batteries. The battalion tactical operations center operated from the Tirana Airfield, in Albania (Base Camp HAWK), while the batteries occupied OPAREAs 2x1 km in size. The battalion normally controlled one battery at a time consisting of 9-12 launchers. The number of launchers varied from mission to mission based on the number of targets in the fire plan. The known engagement area for the fire plan provided an azimuth of fire for the OPAREA.

In the battery OPAREA, each launcher had one firing point and the firing points were only 75-150 meters apart. Figure 1 shows a launcher on a firing point. Under this new employment concept called linear configuration, the SCPs were located on the firing points. This allowed more accurate and safe firing. The “linear configuration” focused on positioning the launchers in a straight line on firing points that were 75-150 meters apart.

Under the linear configuration, the battery did not use hide areas, a platoon headquarters, and the AHA. The platoon headquarters elements were available but were not needed due to the small size of the battery OPAREA. The battery headquarters controlled the launchers instead of the platoons. Hide areas were not needed due to the low enemy threat from either air or counterfire. Figure 2 shows the techniques that were implemented. When firing from this configuration, the MLRS unit had to ensure that the launcher danger areas were cleared and safe. The military police and mechanized forces blocked all roads and did not allow any personnel inside of the back blast area during firing.

The linear configuration can be used when the terrain is restricted and certain enemy threats are present. In Albania, vehicles were at risk of getting stuck in the mud if they got off the main roads and tank trails. Since the conventional threat was extremely low, this configuration allowed for a smaller, more easily defensible perimeter to protect the launchers from more likely threats, such as terrorists. In addition to the linear configuration, the MLRS unit employed the launchers in “lazy W” and “diamond configurations.” The employment strategy is similar to the linear configuration. The lazy W and diamond configurations focused on positioning the launchers using a combination of a W and diamond formation.

NOTE: These new techniques that were developed during Task Force HAWK should only be implemented when METT-T demands a significant change in current MLRS doctrine.

| MLRS OPERATIONS | | |
|-----------------|---|--|
| | Doctrine <u>FM 6-60</u> | TF Hawk <u>Based on METT-T</u> |
| OPAREA | 9x9 km area - Battery (9 Launchers) | 2 x 1 km area -Battery (9-12 Launchers) |
| Firing Points | 18 Firing Points 500-800 m apart | 9-12 Firing Points 75-150 m apart |
| Hide Area | At least 1 per Launcher | No Hide Area -Robust Security Force -Air Superiority |
| Reload Point | At Least 6 per Battery At Least 800 m from FPs | 2 reload points - 75-150 m from FP Pods located with each launcher (alternate) |
| SCP | At Least 6 per Battery | 9-12 SCP SCPs collocated with FPs |
| Platoon HQ | Optimum Commo with the BOC and Launchers | No POC |
| AHA | Collocated with the POC 100 to 300 m from POC | No AHA |

Figure 2. Comparison of the MLRS current employment techniques and TTPs executed during Task Force HAWK

MLRS Forward Operating Base (FOB). FM 101-5-1 defines a Forward Operating Base (FOB) as a base usually located in friendly territory or afloat that is established to extend command and control or communications, or to provide support for training and tactical operations. Facilities may be established for temporary or longer duration operations and may include an airfield or an unimproved airstrip, an anchorage, or a pier. A FOB may be the location of special operations component headquarters or a smaller unit that is controlled and/or supported by a main operations base.

The MLRS unit in Albania deployed one firing battery and a force protection package to a FOB to get within range of enemy targets using rocket and cannon artillery fires. The FOB was located approximately 100-km from the main operations base, with only the Kosovo Liberation Army and the Albanian military troops separating it from Serb forces. The commander of the MLRS battalion maintained operational control over the 380 soldiers in the FOB. The forces at the FOB comprised a task force.

The field artillery forces at the FOB consisted of a MLRS battalion tactical operations center (TOC) (Forward), a MLRS firing battery, a 155mm-Paladin platoon, and a meteorological section. The force protection package consisting of a dismounted infantry company, a platoon of M2 Bradley Fighting Vehicles (BFVs), a 120mm mortar section, an air defense artillery section, a scout platoon, a military police (MP) platoon, engineers, counter-intelligence and civil affairs personnel, and a ground surveillance radar section all augmented the field artillery forces. Additionally, a medical section, a signal section, and a maintenance section provided combat service support. These assets were set up in a defensive perimeter at the FOB. TF HAWK rotated troops from base camp to the FOB as needed. For survivability, the engineers dug positions for all tracked vehicles. Forces at the FOB also provided logistical support to a Q37 counterfire radar located 25 kilometers away.

To execute a live fire mission, the MLRS firing battery, the meteorological section, the Paladin platoon, and the battalion forward TOC deployed from the FOB to forward firing points or position areas. Once in position, the force was ready to provide indirect fires along the Kosovo-Albanian border to suppress enemy air defenses to allow attack helicopters to destroy targets in the engagement area. A robust security force of infantry and military police personnel protected the forward artillery (FA) elements during firing missions.

Force Protection. For an MLRS battalion to provide timely and accurate fires, it must survive on the battlefield. Force protection must be a number one concern. FM 6-60 says a MLRS unit must implement tactics, techniques, and procedures that enhance the unit's ability to survive. These include everything from the avoidance of detection by the enemy to conducting detailed operational decontamination of personnel and equipment, and effectively employing maneuver security forces under the operational control of the unit.

Task Force HAWK augmented the MLRS unit with a robust maneuver security force at firing points and the forward operating base. The security force employed with M2 Bradley Fighting Vehicles (BFVs), dismounted infantry, a Bradley Stinger Fighting Vehicle (BSFV), Avengers, the military police (MP), and, in some cases, engineers, counterintelligence personnel, and civil affairs personnel. During movements, the maneuver commander maintained operational control, while the FA MLRS battery commander assumed a support role. However, once the MLRS unit occupied the battery area and firing points, the FA commander assumed operational control of all assets.

The force protection package developed a 360-degree battery defense perimeter. The MPs controlled any traffic into the perimeter and escorted all local civilians through the area. The dismounted infantry conducted routine patrols of the perimeter, while the BFVs covered all high-speed avenues of approach. The ADA covered all known air avenues of approach with Avengers and a BSFV. The company force protection package provided protection for 9-12 MLRS launchers against an enemy company-sized element. An attack by a larger force would require reinforcements.

It took a reinforced infantry company to secure a firing battery OPAREA. Thus, it would take an infantry battalion to secure an MLRS battalion of three firing batteries and a HHS/TOC location simultaneously. The U.S. Army does not have the force structure to provide force protection packages to MLRS battalions. The MLRS battalion does not have the soldiers or weapons to provide its own security to the level needed.

Lessons Learned:

- Based on METT-T, a MLRS unit may have to employ its units in a non-standard fashion using TTPs uncommon to MLRS doctrine.
- The linear and lazy W/diamond configurations were employment strategies or techniques that may work in restricted terrain and low air and counterfire threat areas.
- A MLRS FOB should be self-sufficient and contain a robust security force of infantry, air defense, and military police personnel with a combat service support package.
- When called to operate a battery MLRS FOB, a MLRS battalion may have to deploy and operate a battalion forward TOC simultaneously with a main TOC on a continuous basis.
- A MLRS unit may require external support for force protection during MLRS operations.

MLRS Tactical Mission

The MLRS battalion's mission is to provide accurate and timely fires to suppress, neutralize, or destroy the enemy with rockets or missiles, and to integrate fire support as a part of the combined arms operation. A MLRS battalion is assigned a tactical mission of general support (GS), general support reinforcing (GSR), or reinforcing (R). When possible, a MLRS battalion is not assigned the tactical mission direct support (DS).

What was the tactical mission of the MLRS unit employed in Albania as a part of Task Force HAWK?

Many believed the MLRS battalion was DS to an attack helicopter regiment. However, an MLRS unit does not have the internal assets to support a DS mission. Normally, MLRS units should reinforce the habitually associated DS cannon unit rather than assume the DS mission on its own. Doctrinally, the MLRS unit in Albania as a part of Task Force HAWK was not DS to the attack helicopter regiment.

| An FA Unit with a Mission of- | Direct Support (DS) | Reinforcing (R) | General Support Reinforcing (GSR) | General Support (GS) | -MLRS Battalion - TF Hawk |
|--|--|---|---|---------------------------------------|--|
| * Answers calls for fire in priority from- | 1. Supported unit. 2. Own observers. 3. Force FA HQs | 1. Reinforced FA. 2. Own observers. 3. Force FA HQs | 1. Force FA HQs. 2. Reinforced FA. 3. Own observers. | 1. Force FA HQs. 2. Own observers. | Force FA HQs (Corps Artillery) |
| * Has as its zone of fire- | Zone of action of supported unit. | Zone of fire of reinforced FA. | Zone of action of supported unit to include zone of fire of reinforced FA unit. | Zone of action of supported unit. | Zone of action of the Aviation Squadron |
| Furnishes fire support team (FIST) or fire support element (FSE) | Provides temporary replacements for casualty losses as required. | No requirement. | No requirement. | No requirement. | No requirement. |
| * Furnishes liaison officer- | No requirement. | To reinforced FA Unit HQ. | To reinforced FA Unit HQ. | No requirement. | LNO to DOCC |
| * Establishes communication with- | FSCs and supported maneuver unit HQ | To reinforced FA Unit HQ. | To reinforced FA Unit HQ. | No requirement. | 1. Corps FSE 2. Attack Helicopters |
| * Is positioned by- | DS FA unit commander or as ordered by force HQ. | Reinforced FA unit or as ordered by force FA HQ. | Force FA HQ or reinforced FA unit if approved by force FA HQ. | Force FA HQ | 1. Battalion Commander 2. Corps Artillery |
| * Has its fires planned by- | Develops own fire plan | Reinforced FA unit HQ. | Force FA HQ | Force FA HQ | Force FA HQ (Corps Artillery) |

Figure 3. Field Artillery Standard Tactical Missions versus TF HAWK Mission

When one of the seven inherent responsibilities is changed, limited, or amplified, a field artillery unit is assigned a non-standard tactical mission. During Task Force HAWK, the MLRS unit was assigned a GS mission to provide timely and accurate fires. However, at times the mission appeared to mirror a non-standard tactical mission. The MLRS unit provided deep SEAD fires for the aviation attack. This FA mission in Albania was similar to a non-standard tactical mission because one or more of the seven inherent responsibilities did not meet the criteria or standard for a GSR, GS, R, or DS mission. The seven inherent responsibilities are shown in fig 3 above.

In looking at these seven inherent responsibilities during Task Force HAWK, the MLRS battalion answered calls for fire from the fire support element (FSE) located with the Corps Deep Operations Coordination Center (DOCC). With TACSAT, the battalion was prepared to answer call for fire (CFF) from the attack helicopters. The battalion practiced orienting a launcher on the center of an engagement area to provide responsive fires. We envisioned shooting targets of opportunity, targets that would assist the helicopters in breaking contact, or targets that helicopters could not engage from the assault by fire positions.

This made the MLRS battalion's zone of fire the same as that of the attack helicopter regiment. The MLRS did not provide FISTs or a FSE because it is not assigned those assets. For the fourth inherent responsibility, the MLRS battalion provided a liaison officer to the DOCC. The MLRS battalion established communications with the FSE at the DOCC and the attack helicopter regiment. While the FA Battalion Commander (at times) positioned the FA units, the FSE at the DOCC planned the fires for the FA MLRS battalion.

Lessons Learned:

- When providing fires for an aviation unit, a MLRS unit may be assigned a GS or non-standard tactical mission.
- If attack helicopter and MLRS units are the only combat multipliers available for an operation, a MLRS unit may answer calls for fire from the Corps FSE or the aviation unit.

Fire Mission Processing (SEAD Fires).

FM 6-60 states that developing MLRS fires and achieving the desired effects on target is a multi-step, multi-channel operation. It involves thorough and effective fire planning. The TF HAWK MLRS battalion supported planned attack helicopter strikes against enemy ground forces with timely suppression of enemy air defenses (SEAD) fires through such planning. Any delay in executing a fire plan would significantly affect the corps' timeline for attack. The battalion conducted numerous rehearsals to fine-tune its techniques. The SEAD fires rehearsal normally consisted of a fire plan with two or more groups.

Fire mission processing for the battalion started at the Corps level. The Corps Fire Support Element (FSE) developed all fire plans in support of the TF mission. The Corps FSE sent the fire plans directly to the MLRS battalion Fire Direction Center (FDC). Normally, the Corps would send fire plans through the brigade Fire Control Element (FCE). However, the brigade did not deploy to Albania initially. Non-Nuclear Fire Plans (NNFP) or conventional fire plans proved ineffective because the battalion's Fire Direction System (FDS) did not allow any flexibility to add additional targets to the fire plan. Adding additional targets to a conventional fire plan using FDS required the battalion FDC to generate a new fire plan. This process was not timely. Therefore, the battalion received fire plans from the Corps FSE at the DOCC in a Fire Mission Call for Fire (FM CFF) format as time on target (TOT) or Time to Fire (TTF). This gave the battalion more flexibility to add additional targets to the plan. Each target in the fire plan had a specific time that artillery effects had to either suppress or destroy the targets.

The battalion FDC plotted the targets and verified the F-Hour, the time that the aviation helicopters crossed the FLOT to attack targets in the engagement area. In the next step, the battalion FDC sent targets to the battery FDC. The battery FDC immediately assigned primary launchers for each target in the fire plan and generated fire missions for each launcher. The unit used several back-up launchers for some of the targets to provide redundancy and to ensure mission execution and timely fires.

Prior to the rehearsal, the battalion sent down a time hack to all elements to ensure that every element had the correct time. During the rehearsal, the battery FDC ensured that both primary and back-up launchers were laid on the targets. Prior to firing, the battalion FDC used code words to notify the attack helicopters that the MLRS battalion was about to fire.

At the completion of the SEAD, the attack helicopters would then move forward to destroy the enemy in the engagement area. The primary launchers would move to the reload point to download pods and reload ammunition. The back-up launchers stayed on the firing points, in position, prepared to fire.

Lessons Learned:

- MLRS units need to be prepared to receive targets directly from the Corps FSE. The FA brigade may not be available.
- When executing a MLRS fire plan using the FDS, the Corps FSE should pass targets in a FM CFF format (not a NNFP), which gives the battalion more flexibility to add additional targets to the fire plan.

Survey, Meteorological, and Ammunition Support

Survey support, meteorological (MET) support, and the re-supply of MLRS ammunition were critical to the MLRS operation in Albania. These three elements provided adequate and timely support to ensure the tactical mission was a success. Initial survey support was determined by using the precision lightweight GPS

receiver. The meteorological section provided accurate and timely MET data to Task Force HAWK units, while the MLRS ammunition re-supply was conducted by both vehicles and aircraft.

Survey. The ability to deliver MLRS rocket/missiles fires accurately and effectively largely depends on accurate survey information. Prior to deploying to Albania, the MLRS battalion coordinated with the National Imagery Mapping Agency (NIMA) to obtain a list of survey control points (SCPs) in the area. For the most part, the SCPs were located on Albanian military installations in the vicinity of the area of the operation. However, due to lack of Albanian support and coordination problems, the MLRS battalion was not able to use them.

Instead the MLRS unit established survey control by using the precision lightweight GPS receiver (PLGR). The unit took the average reading of two PLGRs to establish a survey control point. It took the battalion about four hours to establish this survey control point with the PLGR due to weather effects. The low cloud cover and rain in the region made it very difficult for the PLGR to locate satellites.

After the survey data was established with the PLGR, the MLRS unit initialized the Position and Azimuth Determining System (PADS). This initialization took approximately three hours. Once the PADS was initialized, the PADS team was prepared to provide survey to the launchers.

Meteorological Support. The five general requirements for achieving accurately predicted fire are target location and size, firing unit location, weapon and ammunition information, computational procedures, and meteorological (MET) information. If all five requirements are satisfied, a MLRS unit will deliver accurate and timely fires. Meteorological information is needed for rocket but not missile firing because rockets are particularly sensitive to low-level winds.

A six-person MET section from the Corps field artillery brigade deployed with the MLRS battalion to Albania. Initially, the MET section occupied a position with the MLRS battalion at Base Camp HAWK, Albania. While at the base camp, the MET section supported the MLRS battalion, other artillery units, and the Air Force with MET data. Whenever the MET section deployed forward at the FOB, the Base Camp HAWK firing elements were without MET coverage. Deploying an additional MET section to TF HAWK may have resolved this issue.

Ammunition. The MLRS battalion TOC, located at Base Camp HAWK, deployed firing batteries to the local areas in Albania to fire SEAD missions. The MLRS batteries deployed to operation areas with enough ammunition to accomplish the mission. Each launcher carried two launch pod containers (LPCs) or two guided missile launch assemblies (GMLAs). Heavy Expanded Mobility Tactical Trucks (HEMTT) carried additional rockets and missiles. Each launch pod contained either six rocket tubes or one missile housing in a containerized shipping, storage, and launch frame. The unit deployed with a combination of rockets, extended range rockets, and block 1 and block 1A missiles. Characteristics and capabilities of the munitions are listed below in table 1.

| Munitions | J-code | Characteristics | Targets | MAX Range(km) |
|------------------------|--------|--------------------|---|---------------|
| Rockets | JED | 644 DPICM Bomblets | Personnel, Light Armor, and Soft Vehicles | 32 |
| Extended Range Rockets | JEL | 516 DPICM Bomblets | Personnel, Light Armor, and Soft Vehicles | 45 |
| Block 1 missiles | JEE | 950 APAM Bomblets | Personnel and Light Materiel | 165 |
| Block 1A missiles | JEN | 300 APAM | Personnel and Light Materiel | 300 |

Table 1. MLRS Ammunition Available

To re-supply the MLRS battery at the firing points with rockets and missiles, the MLRS battalion planned to use a combination of HEMTTs and CH-47D helicopters to transport the ordnance. The HEMTTs re-supplied the launchers located 20-30 kilometers from the ammunition supply point at the base camp. Re-supplying the launchers by HEMTTs took one hour of travel time. The HEMTTs were capable of transporting four LPCs/GMLAs, a total of eight with the trailer. However, the HEMTTs did not deploy to the firing points with trailers because of narrow roads and mountainous terrain in the host nation. The CH-47D helicopters re-supplied firing elements further than 20-30 km from the base camp. The medium lift helicopters were capable of transporting LPCs and GLMAs internally and externally. A diagram of the ammunition re-supply plan is located below.

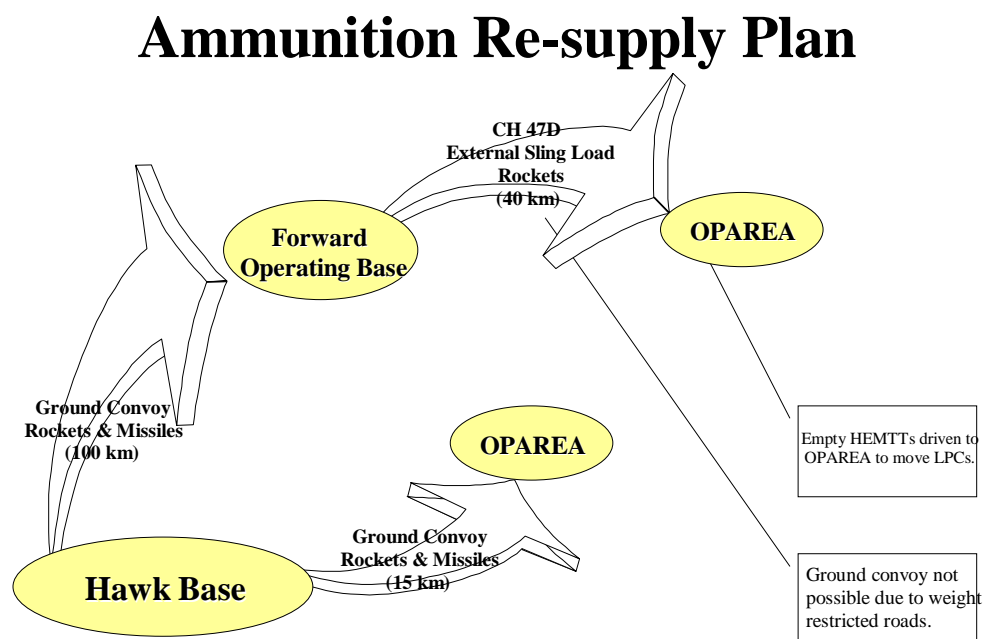
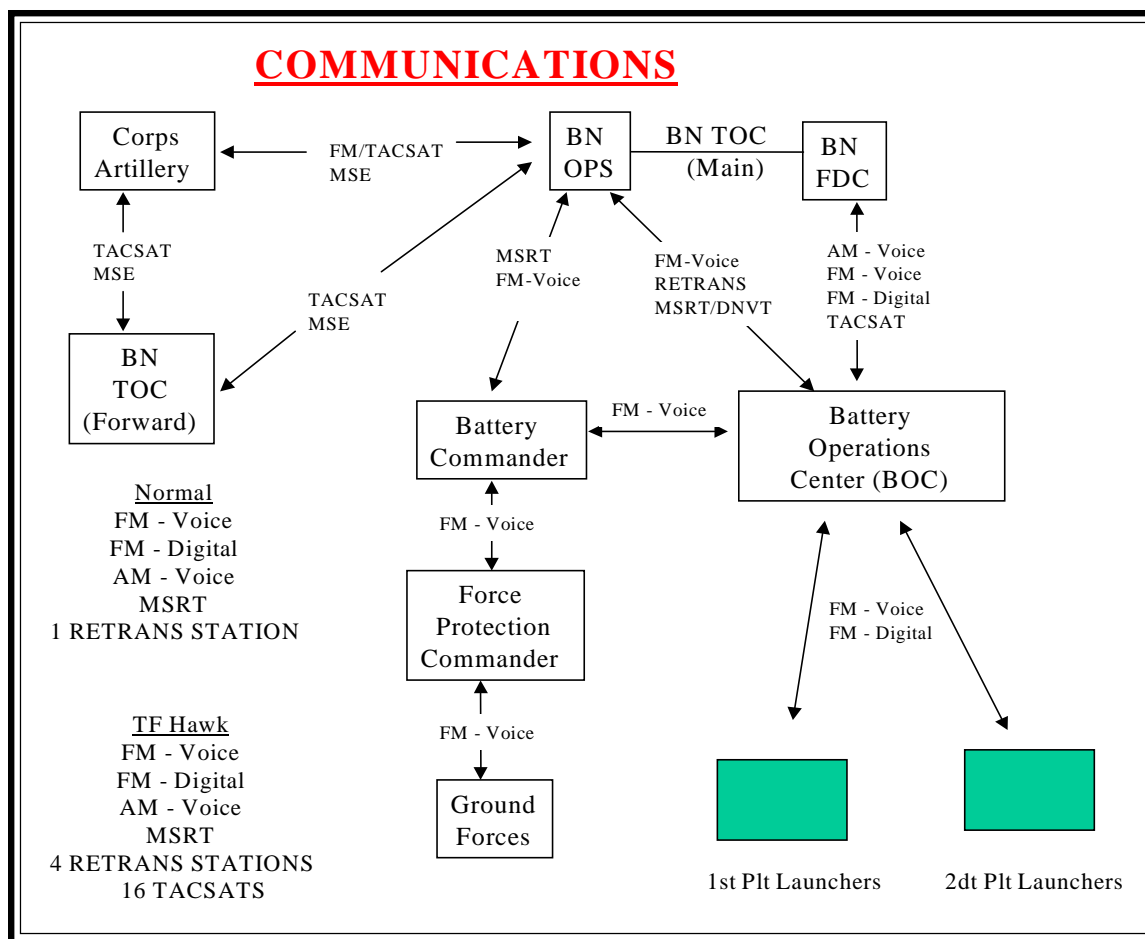


Figure 4. Ammunition Re-supply Plan

Lesson Learned:

- If necessary, MLRS units can fire using survey data from the PLGR.
- The Unit ensured accuracy of survey control data by using the current datum system, World Geodesic System 1984 (WGS 84), for both PADS and the PLGR.
- To establish SCPs quickly in a new region, a topographic team may be required.
- The topographic team should establish SCPs throughout the area of operation.
- Time required establishing a survey by the PLGR may be affected by weather.
- Two meteorological sections may be needed if a MLRS unit deploys some of its assets to a forward operating base.
- Mobility restrictions and narrow roads may preclude the use of HEMTT trailers for ammunitions re-supply.
- MLRS units should continue to train with aviation units on aerial ammunition re-supply.
- External/sling loading MLRS ammunition may be the preferred method of re-supply.
- GMLAs can not be sling loaded in accordance with FM 6-60.



FM 6-60 states communication in MLRS battalions is critical to providing fire support. Both the dispersion of subordinate elements and the distance to controlling/supported headquarters challenged the battalion organic communication assets. The MLRS unit faced problems with communications due to long distances between units and unfavorable mountainous terrain. To compensate for this problem, the MLRS unit used a combination of AM-voice, FM-voice, FM-digital, mobile subscriber equipment (MSE), satellite communications, and employing retrans stations when necessary. The current AM radio, AN/GRC-193, was unreliable. Figure 5 shows these communications assets.

The MLRS battalion employed additional retrans stations from other units at Base Camp HAWK to communicate effectively between firing units. The battalion operated on four main nets. The four stations were the FA battalion command net, the battalion voice fire direction net, the battalion digital fire direction net, and the force protection/infantry battalion command net. In addition, tactical satellite (TACSAT) and MSE communications proved to be an invaluable asset to the battalion.

The MLRS battalion's communications architecture required the battalion TOC to communicate with the batteries via FM-voice, FM-digital, AM-voice, MSE, or TACSAT. The batteries communicated with the launchers via FM (voice and digital). The battery commander at the firing point maintained FM communications with the force protection commander. The battalion TOC (main) communicated with the battalion TOC (forward) via MSE and TACSATs.

Lessons Learned:

- In mountainous terrain, a MLRS unit requires satellite communications to communicate effectively.
- In unfavorable terrain, additional retrans stations are needed for a MLRS unit to communicate effectively.
- The TACSATs and additional retrans provided the MLRS unit the ability to communicate between the battalion TOC and firing elements.
- The AM radio, ANGRC 193, is antiquated and unreliable in this environment. A better long distance system must be developed.

“Positively Focused and Fully Engaged” Lessons From Task Force FALCON

This account of events in Kosovo provides a brief summary of some of the principal challenges that have confronted Task Force FALCON since June 1999. It also documents Task Force FALCON's progress and highlights the difficult challenges that lie ahead. For the reader's benefit, this narrative also describes some of the distinct differences between the Kosovo mission and that of Task Force Eagle in Bosnia-Herzegovina. This summary will also list some indicators of progress toward accomplishing the mission and describe some of the future operational challenges for Task Force FALCON as it attempts to develop civil order in the Multinational Brigade (East) (MNB (E)) sector.

The Mission

Task Force FALCON's mission as it operates in MNB (E) is clear:

- Ensure force protection for all troops in the AOR.
- Maintain a safe and secure environment for all civilians regardless of their ethnicity.
- Monitor, verify, and when necessary, enforce the demilitarization and transformation of the Kosovo Liberation Army (KLA) and the Federal Republic of Yugoslavia (FRY) forces in Kosovo to establish a stable environment.
- Transition responsibility to appropriate civil organizations and eventually to local civilian leadership.
- Withdraw peacefully leaving an environment that ensures continued stability.

The Early Challenges

Operation JOINT GUARDIAN, the NATO operation in Kosovo, began as a follow-on mission to Operation ALLIED FORCE (OAF). The OAF air operation successfully forced the Vojska Jugoslavije or Yugoslav armed forces (VJ) that had ravaged Kosovo during April and May of 1999 to depart Kosovo. Initially, Task Force FALCON included 1,700 members of Task Force HAWK who had been designated as the nucleus of Task Force FALCON at the close of Operation ALLIED FORCE. These troops moved from Albania to Kosovo and arrived in mid-June. The initial force structure grew rapidly as 5,000 soldiers departed the Central Region and passed through Camp Able Sentry in Macedonia enroute to Kosovo. The 1st Armored Division provided the very early structure, with 2nd Brigade, 1st Infantry Division, deploying as the initial brigade-sized complement.

As the task force soldiers moved toward their bases, they were followed closely by returning Kosovar Albanians bent on retribution and revenge. Serbs who had not followed the VJ forces out of Kosovo became immediate targets. Their persons, homes, and possessions were in danger from the first day of the Albanians' return. Murders, assaults, and house burnings occurred every day throughout the province and the task force represented the only law in the MNB (E) area of operations. Essentially, the task force, which was originally structured and tasked to assist in resettling the Kosovar Albanians, became a force responsible for protection of life and property.

In order to give Task Force FALCON a legitimate chance of success in halting the lawlessness, the TF FALCON sector was divided into smaller areas of operation (AOs) and specific units were assigned responsibility for each one. The task force commander and his staff assigned battalion-sized AOs early on and positioned the two forward base camps (Bondsteel and Montieth) to support operations within the AOs.

From the arrival of the first command and control survey team at a wheat field in central Kosovo on 12 June 1999, to the present, the mission has not changed. Today, only six months later, Camp Bondsteel, a sprawling, bustling military city, and the rapidly growing inner city Kaserne of Camp Monteith, are testimony to the commitment of the NATO and Multinational Forces to carry out their mandate. It also is evidence of Task

Force FALCON's effective leadership and responsive chain of command.

Camp Bondsteel is the headquarters of the task force and is the operational center of the MNB (E) effort. The headquarters controls the operations of a contingent of multinational peacekeepers from the United States, Russia, Ukraine, Poland, Greece, United Arab Emirates, and Jordan. The task force also supervises the civilian and military support structure for the entire MNB (E) sector.

Both Camp Bondsteel and Camp Monteith expanded in size and capability at an impressive rate. In less than four months, Bondsteel, which had been a wheat field on 12 June 1999, was transformed into a large (3km x 2km) town capable of sustaining most of the forces operating in the MNB (E) sector.

The lessons learned in Bosnia-Herzegovina during the early days of Operation JOINT ENDEAVOR were applied to ensure that the forward support sites were both efficient and secure. The initial site survey teams which selected and prepared the camps included engineer planners, force protection analysts, and contractor construction specialists. They selected the sites wisely and planned them effectively.

An added challenge lay in the fact that while a division staff normally has 12-20 units and agencies responding to it, the Task Force FALCON staff controls and coordinates the efforts of over 50 organizations. These organizations include U.S. and multinational military units, civilian firms, and international agencies.

Lessons from Bosnia-Herzegovina

During the formation of Task Force FALCON and its early operations in Kosovo, the task force made use of the many lessons learned by Task Force EAGLE during Operation JOINT ENDEAVOR. The Joint Security Committee, for instance, was formed in July based on a model similar to that used in Bosnia-Herzegovina. It remains a vital avenue for progress in communicating and coordinating with local leaders of both ethnic groups.

The use of military police (MP) trained in interrogation and search procedures to stabilize the entire MNB (E) sector is a carryover from the Bosnian experience. A composite MP battalion mans sub-stations in those towns presenting the biggest security risks. The battalion also patrols daily throughout the entire U.S. sector. The military police provide both a visible force for safety and security, and an excellent source of vital information for the Task Force.

The integration of the Russian, Polish, and Greek contingents into the task force was accomplished using the model that worked in Bosnia. After initial concerns about the willingness of Russian senior officers to work with NATO and Western commanders, the situation has stabilized and interaction between the task force and the 13th Russian Tactical Battalion is excellent. The Russians control the northeast sector of the MNB (E) AO. They coordinate their actions and share information with the task force on a daily basis.

The use of liaison officers is another control measure developed and formalized in Bosnia-Herzegovina that is paying dividends in Kosovo. Each multinational contingent provides full-time liaison officers to the task force headquarters. They are informed on the operations of their parent units and are available constantly to the Task Force FALCON staff. Liaison officers from the major U.S. units in the MNB (E) sector are also resident at the headquarters.

Support operations utilizing an intermediate support base proved successful in Bosnia-Herzegovina and are being performed just as effectively in Kosovo. The support base at Camp Able Sentry (CAS) is organized to respond to the varied demands of Task Force FALCON.

The Kosovo Environment Is Very Different

While there is a similarity between many of the missions and tasks performed in Bosnia-Herzegovina, the fact remains that Kosovo is a different contingency operation with a very different set of parameters. Unlike Bosnia-Herzegovina, there is no internationally recognized agreement that can be considered an accord and there is no "zone of separation" between the factions. Serbs live in small villages in close proximity to

Albanian towns, or in enclaves within the larger cities. They are hesitant to move outside their immediate surroundings and they are indifferent, if not hostile, toward the Kosovo Force (KFOR). The task force commander's first mission priority is the security of the population; his second priority is their integration into a multiethnic civil administration of the province.

The integration of Albanians and Serbs is, and will continue to be, a very difficult task. Unlike Bosnia-Herzegovina, Kosovo never had a true integrated civil infrastructure. There is no generally supported form of government and no police, postal, water, electric, or sewage services. In all, there are 506 towns and villages in MNB (E) and only one civil administrator for the entire sector. He works under the auspices of the United Nations Mission for the Integration of Kosovo (UNMIK) and has a staff of some 30 personnel. His area of responsibility is vast and very difficult to cover.

The continued lawlessness in Kosovo is yet another factor not encountered in Bosnia-Herzegovina. The withdrawal of VJ forces, and the disbanding of the Ministry of Interior Police (MUP), created a void that was filled quickly by semi-organized crime groups of 16-25 year old thugs who engage in indiscriminate violence and vandalism. The spectrum of organized crime runs from car theft rings to a white slavery market. While neither ethnic group is safe from the mobsters, KFOR and its units have not yet been targeted.

The Future

The UNMIK Regional Administrator has set two goals for the near term: an improvement in economic activity; and, the establishment of core civil functions and basic civil administration. Toward these ends the mission is working to pay an initial stipend of 100-300 DM to each government worker. While it isn't much of a stipend, it is a starting point and represents progress to workers who have received no pay for months. Those included in the program are teachers, judges, fireman, water works personnel, and local administrators.

When all aspects are considered, there has been progress made in Kosovo since June 99. If the debilitating factors of crime and violence do not derail the attempts by the UNMIK Regional Administrator and the KFOR Civil Affairs personnel, that progress should continue.

Lawlessness of a violent nature has been brought under control through the continued efforts of the officers and soldiers who operate throughout the sector. That control must be maintained until the UNMIK Police Force can be fully organized and begin functioning.

The implementation of United Nations Security Council Resolution (UNSCR) 1244 and the Military Technical Agreement (MTA) with respect to returning Federal Republic of Yugoslavian forces must be closely monitored. It will represent a coordination challenge and require that any returning VJ type forces be controlled and monitored.

Ensuring Serb safety and encouraging their movement out of their enclaves is one mission that has a high priority, but progress is slow. The Serbs are still tense and distrustful. This situation has not changed appreciably in any part of the sector and there does not appear to be a short-term solution. The Joint Security Committee is making some progress toward improving relations with local civil administrations, and it is a vital agent for progress in integration. But, for the foreseeable future, the focus of Task Force FALCON will be on maintaining the local security environment that has been established, and in providing an atmosphere where economic and administrative progress can be made.

Progress Is Slow, But Determined

It has been six months since Task Force FALCON began performing its mission in Kosovo and its success is evident in the improved security within the MNB (E) sector. The keys to that progress are the situational awareness of all task force members and their total immersion in the mission.

Amidst all the problems that exist, measurable progress is being made. Violence in the MNB (E) sector has decreased markedly over the first 120 days of the Task Force FALCON deployment. Murders,

which peaked at eight in one day during June, are now occurring less than once a day. Assaults, which occurred by the hundreds each day in June, are now down to two on an average day. Incidents of arson that totaled 130 during one June day, now occur on an average of once a day. The majority of these incidents (76 percent of the assaults and 38 percent of the looting) occur in the cities of Gujilane and Novo Brdo.

The reason for this progressive return to stability rests clearly with the presence and performance of KFOR. In a typical day the units in MNB (E) are engaged in the following operations:

- 190 security patrols (day and night).
- 65 checkpoint operations.
- 43 base camp security and quick reaction force missions.
- 64 key facility security missions (railroad stations, radio towers, fire stations, and utility sites).

Progress is also being made in the civil affairs and community relations arena. The wheat and other crop harvest was good and some progress has been made in distributing it. Stores are opening and increasing their inventories daily. What little industry exists is opening plants (pipe, cement, and farm machinery) and trying to sell their products.

If there is to be continued stabilization and security within the province several things must occur:

- The downturn in lawlessness between ethnic factions that has taken place in the last six months must continue.
- The UN agencies that are striving to increase civil control and administration must achieve considerable progress.
- The basic tenets of an organized society, such as proof of and respect for ownership, must be honored.
- Advancements must be made in creating and building an infrastructure of services within the province, based on full participation by all residents.
- Distractions from unofficial control groups, such as the Kosovo Protection Corps or the Serb Protection Police, must be minimized.
- KFOR must closely monitor the return of VJ forces to the province for any purpose.
- Serb distrust and fear must be overcome in order to draw them from the tight inner city enclaves surrounded by Albanian intimidation.

Finally, it is important to understand that the Task Force FALCON Commander fully understands the challenges that face him. He has impressed upon his soldiers the seriousness of their mission. Within his command he has established the desired end-state and the standards for achieving it. He has explained it clearly to the task force and has coached and trained his staff in order to create an environment for success. He honestly evaluates the level of progress toward accomplishing the mission and then focuses on the short-falls.

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